**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Scientific Method Pre-Assessment**

*This pre-assessment is designed to measure your current knowledge of scientific method topics. The results will be used to gauge your progress over the course of the year. You are not expected to know all the answers on this assignment, but we want you to do the best you can. You will be given an effort grade for completing this pre-assessment. Be sure to answer each question as thoroughly as possible.*

Bill is a member of his high school basketball team. He wants to improve his performance and thinks that drinking an energy drink before the game will help. He wants to figure out which brand of energy drink will improve his performance the most. He thinks that Red Bull will help him score more points. He decides to test Red Bull, Monster, Full Throttle, and water. There are 20 games during the season. Before each game, he will drink one of the beverages and then record the number of points he scores during the game. The data he collected is recorded below. Answer the questions that follow using all of this information.

**Table 1**

|  |  |  |
| --- | --- | --- |
| Game | Drink | Points |
| 1 | water | 4 |
| 2 | Red Bull | 8 |
| 3 | Monster | 6 |
| 4 | Full Throttle | 4 |
| 5 | water | 8 |
| 6 | Red Bull | 6 |
| 7 | Monster | 4 |
| 8 | Full Throttle | 6 |
| 9 | water | 2 |
| 10 | Red Bull | 7 |
| 11 | Monster | 8 |
| 12 | Full Throttle | 4 |
| 13 | water | 9 |
| 14 | Red Bull | 10 |
| 15 | Monster | 6 |
| 16 | Full Throttle | 8 |
| 17 | water | 6 |
| 18 | Red Bull | 8 |
| 19 | Monster | 10 |
| 20 | Full Throttle | 7 |

**Table 2**

|  |  |
| --- | --- |
| Drink | Average Points per Game |
| water | 5.8 |
| Red Bull | 7.8 |
| Monster | 6.8 |
| Full Throttle | 5.8 |

1. Write a sentence stating the problem/question being investigated.
2. What is Bill’s hypothesis?
3. What is the independent variable in Bill’s experiment? Explain.
4. What is the dependent variable in Bill’s experiment? Explain.
5. What are 2 constants that Bill should have in his experiment? Explain.
6. What would be considered the control in this experiment? Explain.
7. How did Bill analyze the data?
8. Was Bill’s hypothesis supported? Explain.
9. What was good about the way that Bill set up his experiment? Explain.
10. What should Bill have done differently to improve the experiment? Explain.
11. What other factors might have influenced Bill’s results?